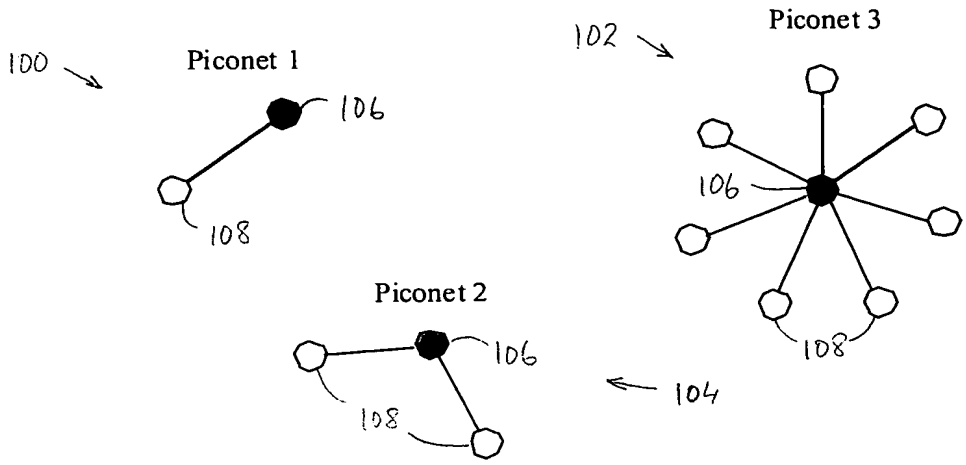


FIG. 1
(Prior Art)

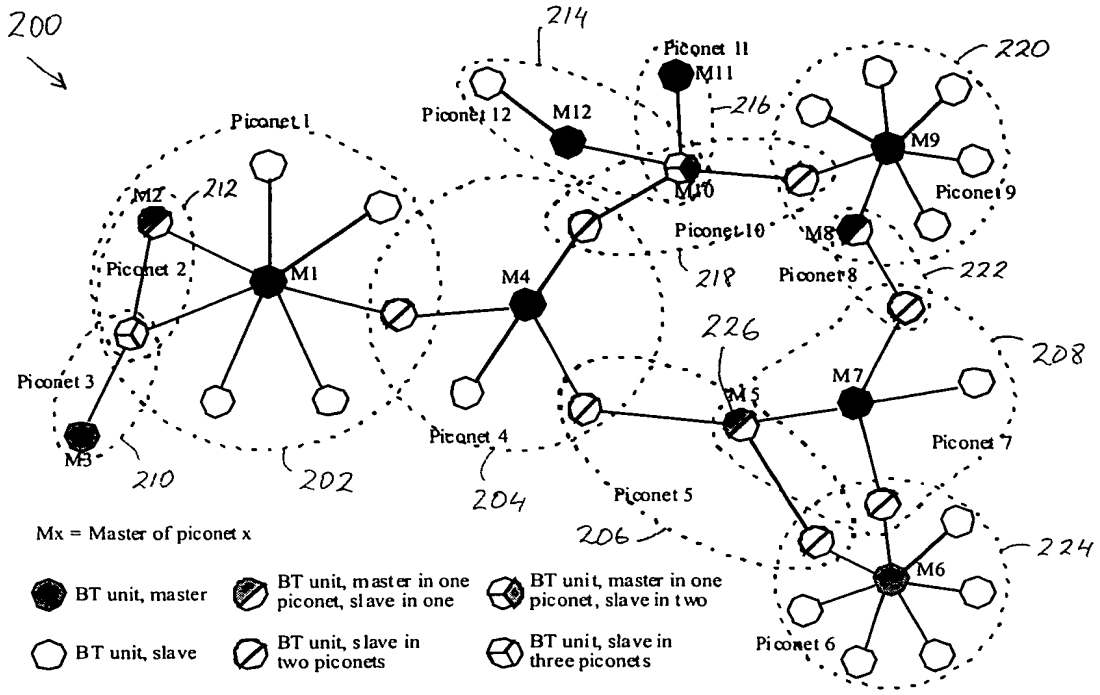


FIG. 2
(Prior Art)

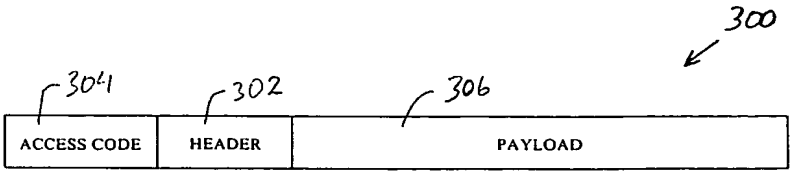


FIG. 3
(Prior Art)

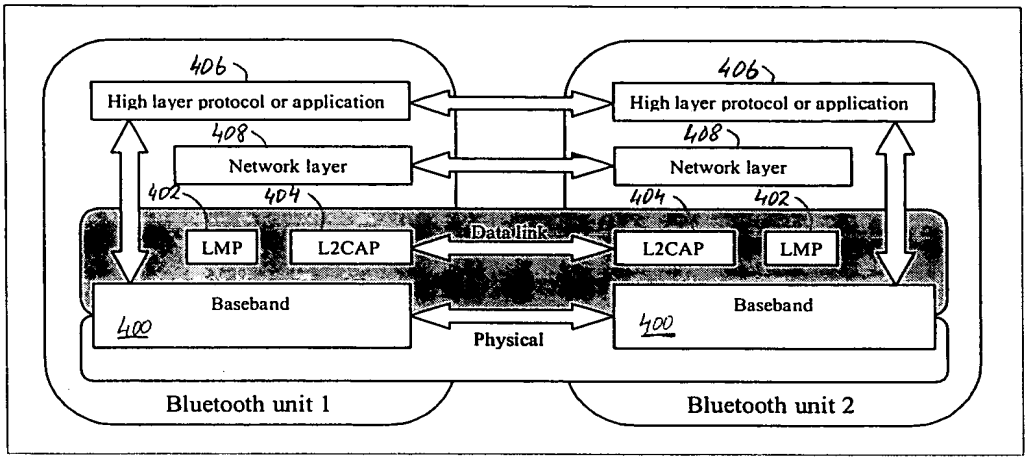


FIG. 4
(Prior Art)

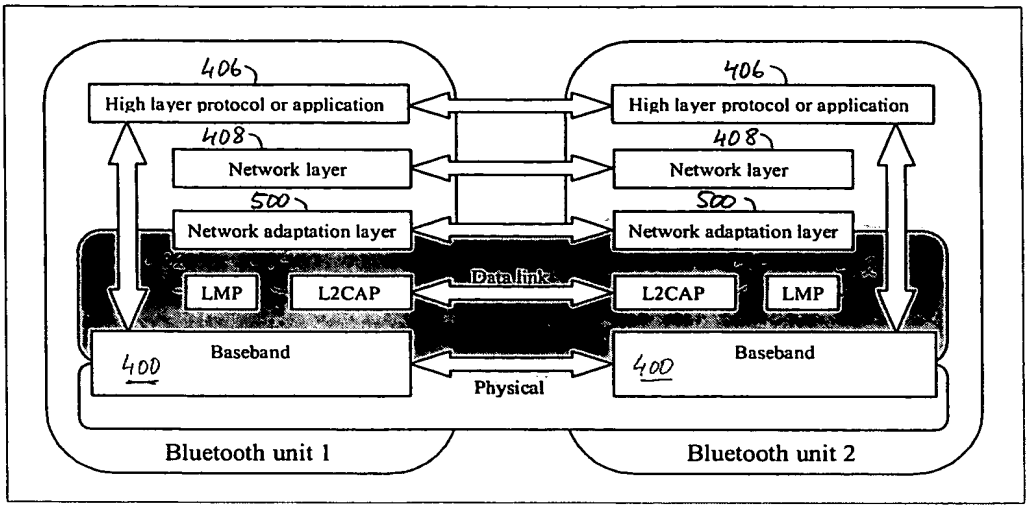


FIG. 5
(Prior Art)

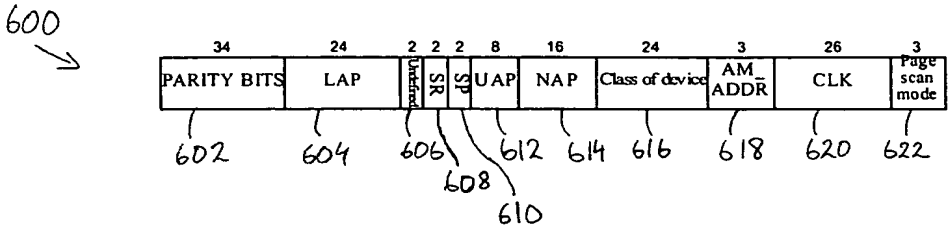


FIG. 6
(Prior Art)

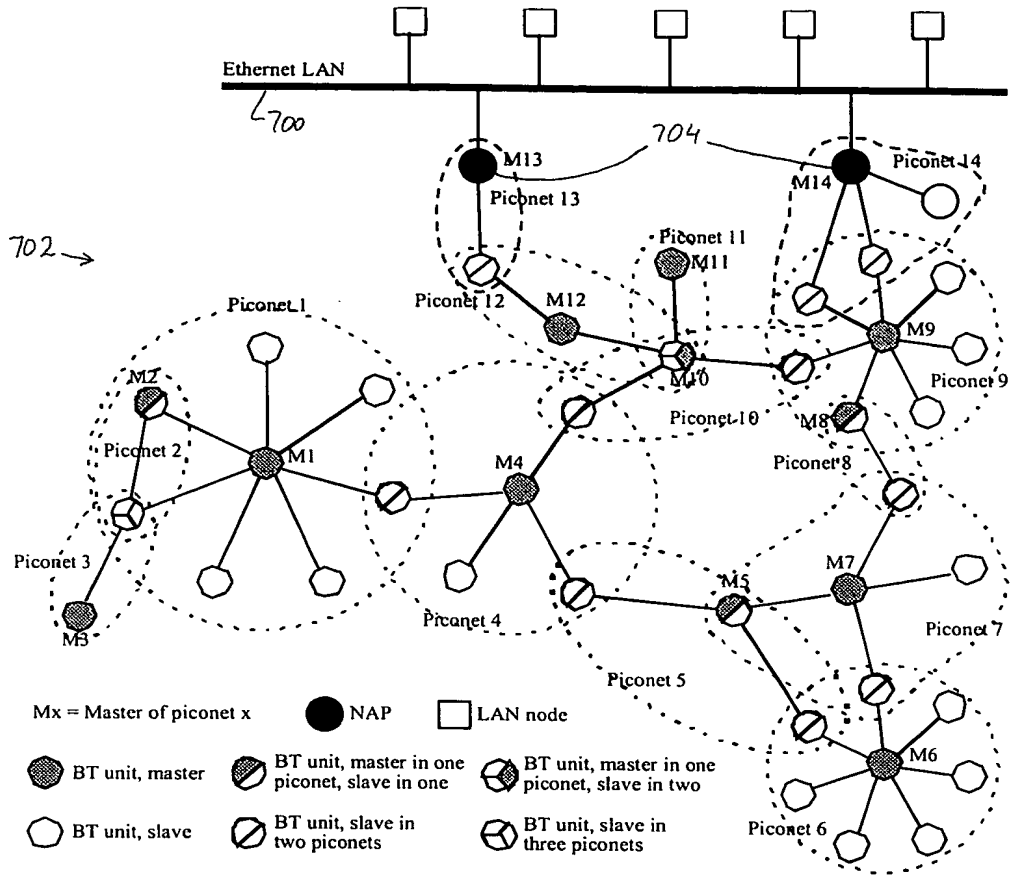


FIG. 7
(Prior Art)

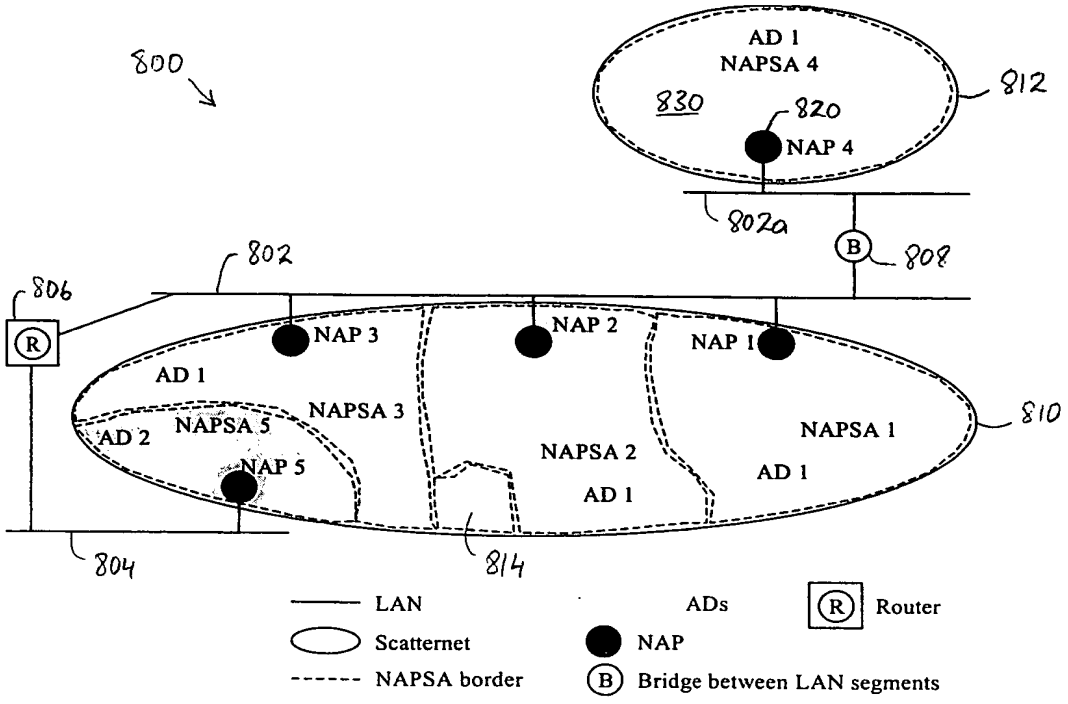


FIG. 8
(Prior Art)

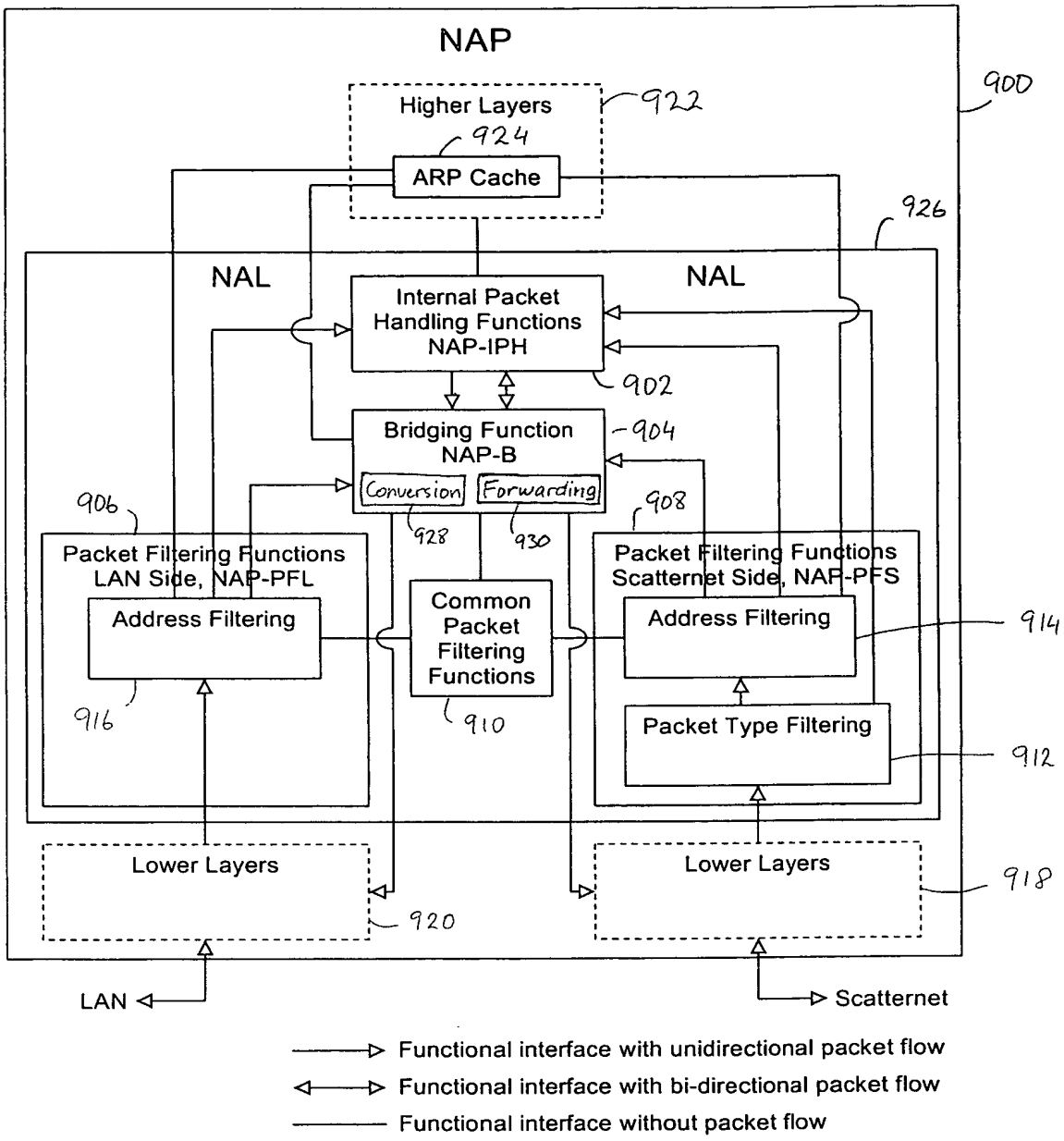

NAP
900
Higher Layers
922
924
ARP Cache
926
NAL
NAL
Internal Packet Handling Functions NAP-IPH
902
Bridging Function NAP-B
904
Conversion
Forwarding
928
930
906
908
Packet Filtering Functions LAN Side, NAP-PFL
Address Filtering
916
Common Packet Filtering Functions
910
Packet Filtering Functions Scatternet Side, NAP-PFS
Address Filtering
914
Packet Type Filtering
912
Lower Layers
920
Lower Layers
918
LAN
Scatternet
Functional interface with unidirectional packet flow
Functional interface with bi-directional packet flow
Functional interface without packet flow

FIG. 9

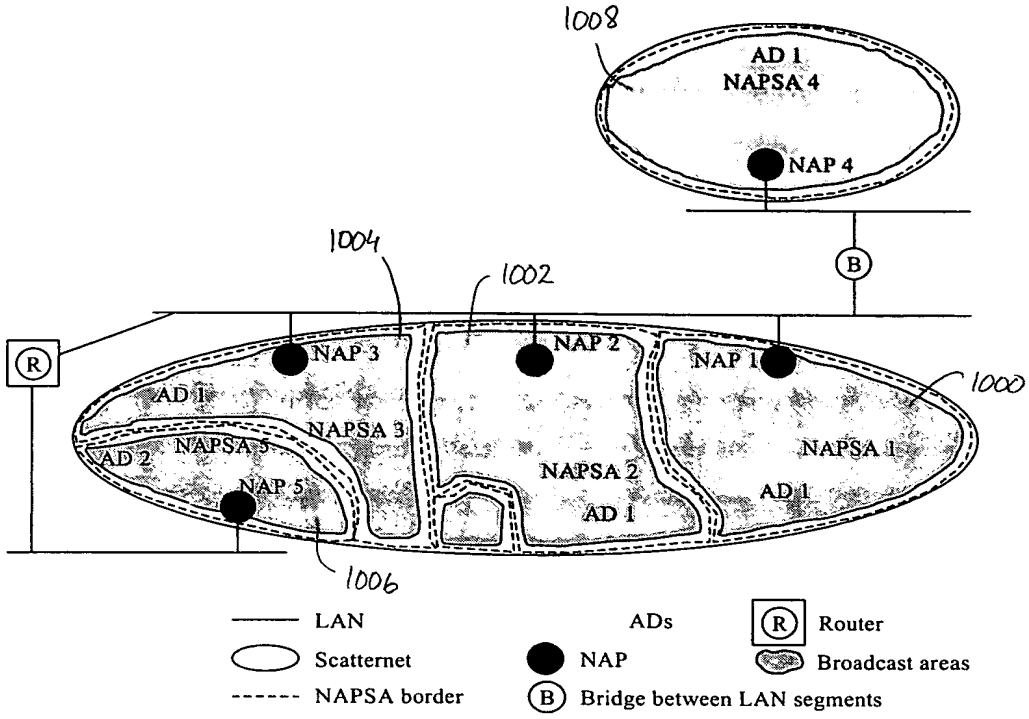

1008
AD 1
NAPSA 4
NAP 4
B
1004
1002
R
NAP 3
NAP 2
NAP 1
1000
AD 1
NAPSA 3
AD 2
NAPSA 5
NAPSA 2
NAPSA 1
NAP 5
AD 1
AD 1
1006
LAN
Scatternet
NAPSA border
ADs
NAP
B
Bridge between LAN segments
R
Router
Broadcast areas

FIG. 10

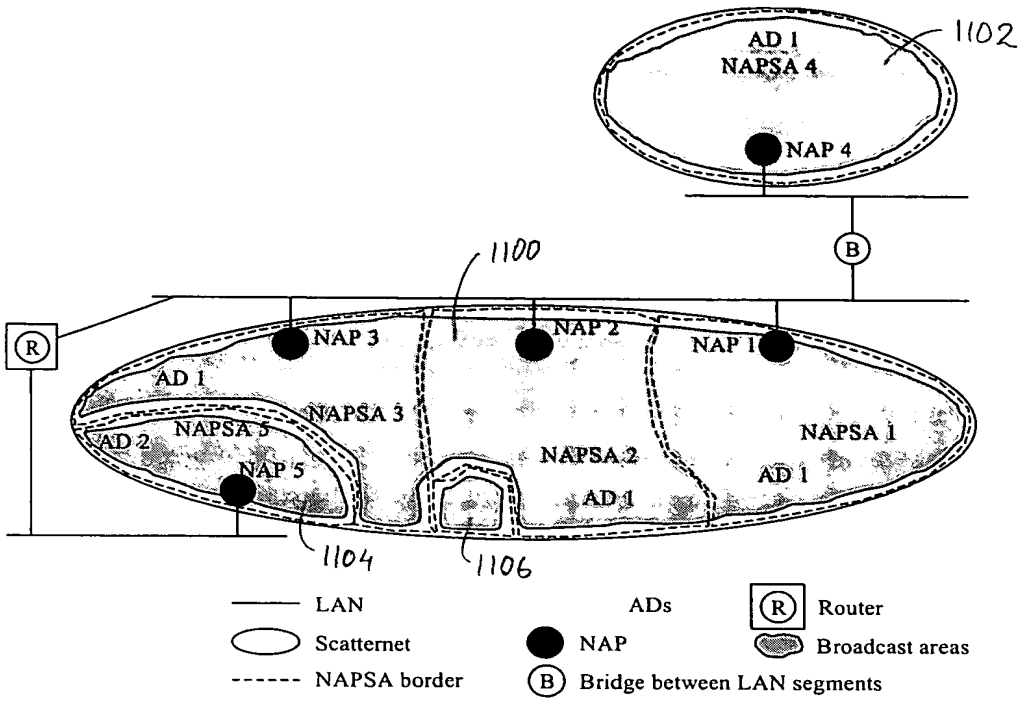

AD 1
NAPSA 4
1102
NAP 4
B
1100
R
NAP 3
NAP 2
NAP 1
AD 1
NAPSA 3
NAPSA 5
AD 2
NAP 5
NAPSA 2
AD 1
NAPSA 1
AD 1
1104
1106
LAN
ADs
R
Router
Scatternet
NAP
Broadcast areas
NAPSA border
B
Bridge between LAN segments

FIG. 11

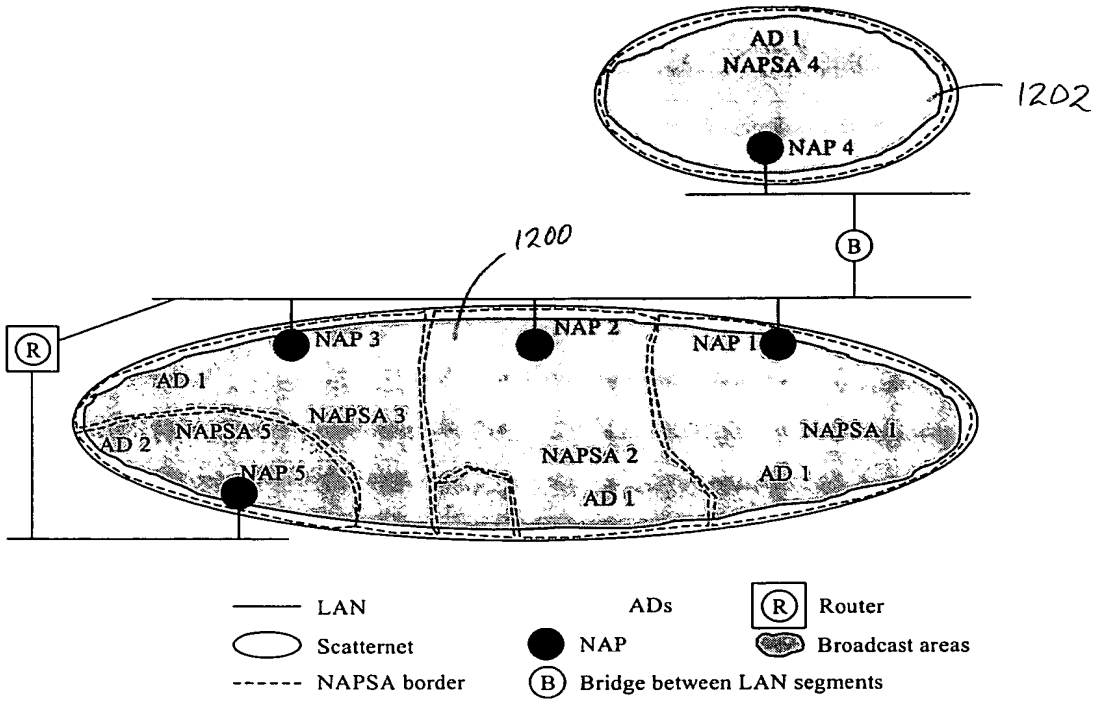

AD 1
NAPSA 4
1202
NAP 4
B
1200
R
NAP 3
NAP 2
NAP 1
AD 1
NAPSA 3
AD 2
NAPSA 5
NAPSA 1
NAPSA 2
NAP 5
AD 1
AD 1
LAN
ADs
R
Router
Scatternet
NAP
Broadcast areas
NAPSA border
B
Bridge between LAN segments

FIG. 12

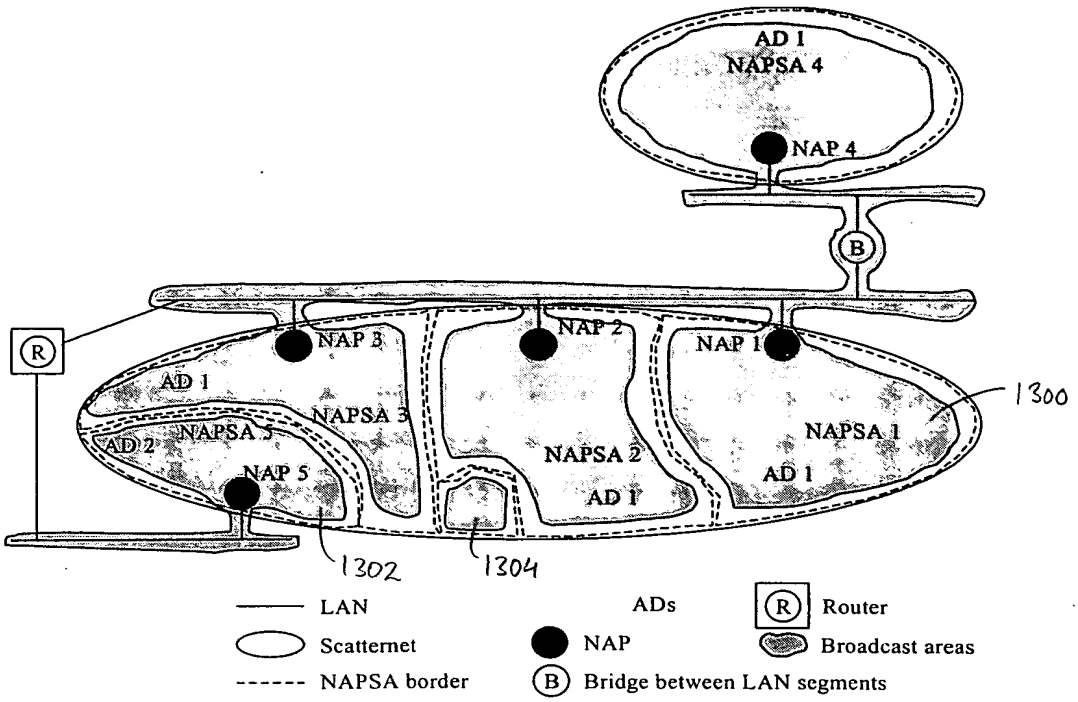

AD 1
NAPSA 4
NAP 4
B
R
NAP 3
NAP 2
NAP 1
AD 1
NAPSA 3
AD 2
NAPSA 5
NAPSA 2
NAPSA 1
NAP 5
AD 1
AD 1
1300
1302
1304
LAN
Scatternet
NAPSA border
ADs
NAP
B Bridge between LAN segments
R Router
Broadcast areas

FIG. 13

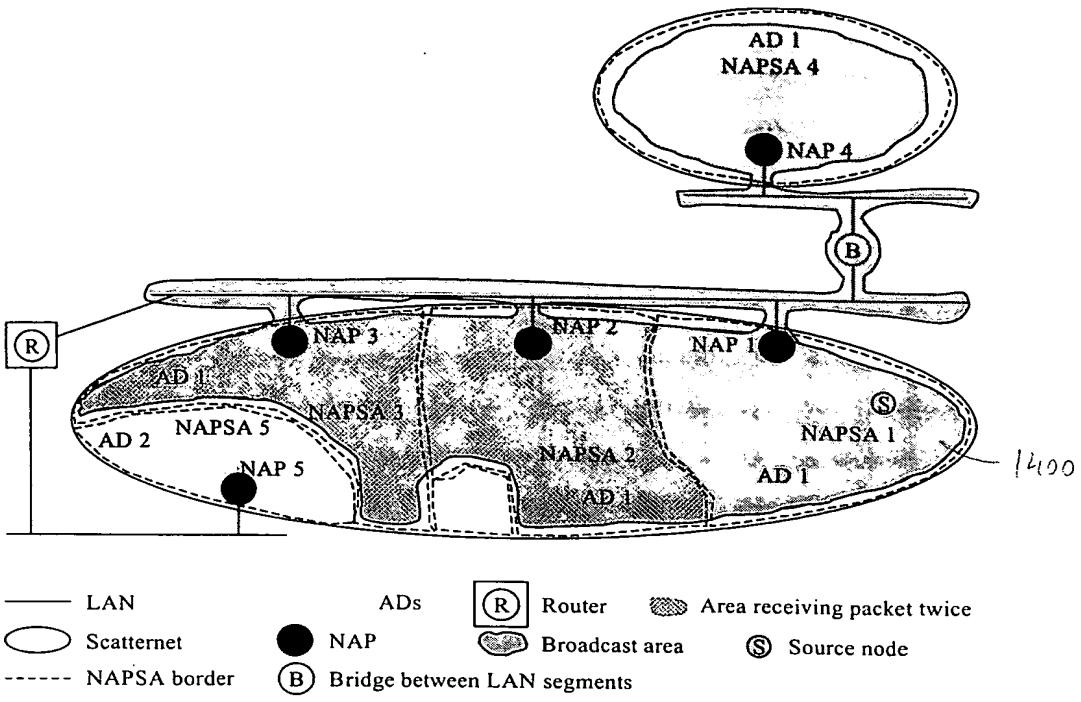

AD 1
NAPSA 4
NAP 4
B
R
NAP 3
NAP 2
NAP 1
AD 1
NAPSA 3
AD 2
NAPSA 5
NAP 5
NAPSA 2
AD 1
S
NAPSA 1
AD 1
1400
LAN
ADs
R
Router
Area receiving packet twice
Scatternet
NAP
Broadcast area
S
Source node
NAPSA border
B
Bridge between LAN segments

FIG. 14

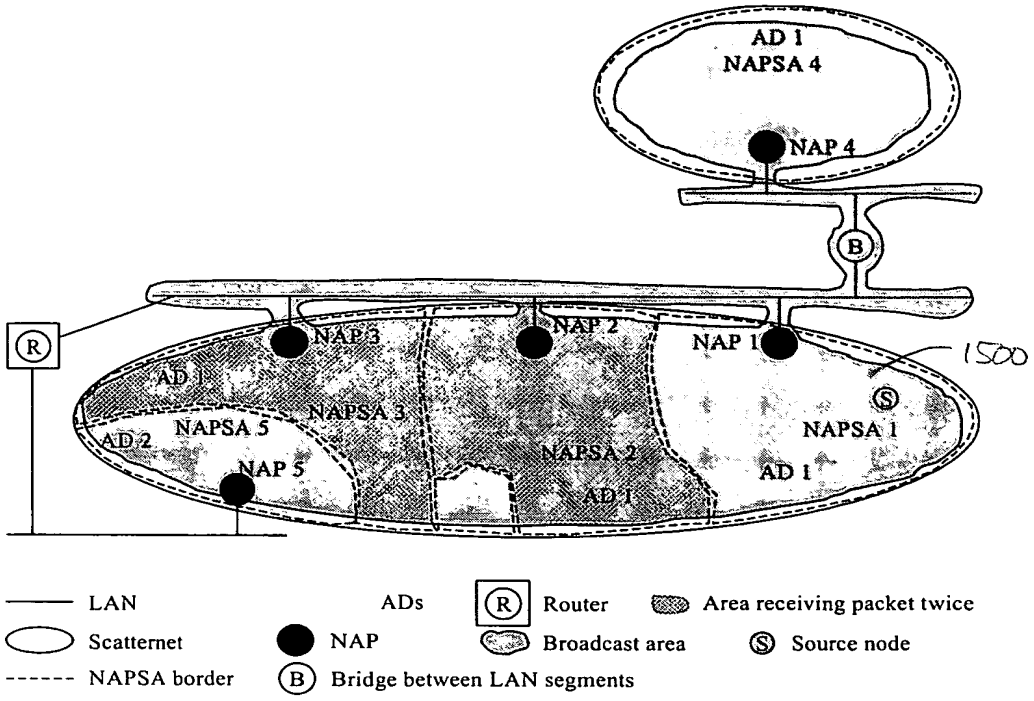

AD 1
NAPSA 4
NAP 4
B
R
NAP 3
NAP 2
NAP 1
1500
AD
NAPSA 5
NAPSA 3
AD 2
NAP 5
NAPSA 2
AD 1
NAPSA 1
AD 1
S
LAN
ADs
R
Router
Area receiving packet twice
Scatternet
NAP
Broadcast area
S
Source node
NAPSA border
B
Bridge between LAN segments

FIG. 15

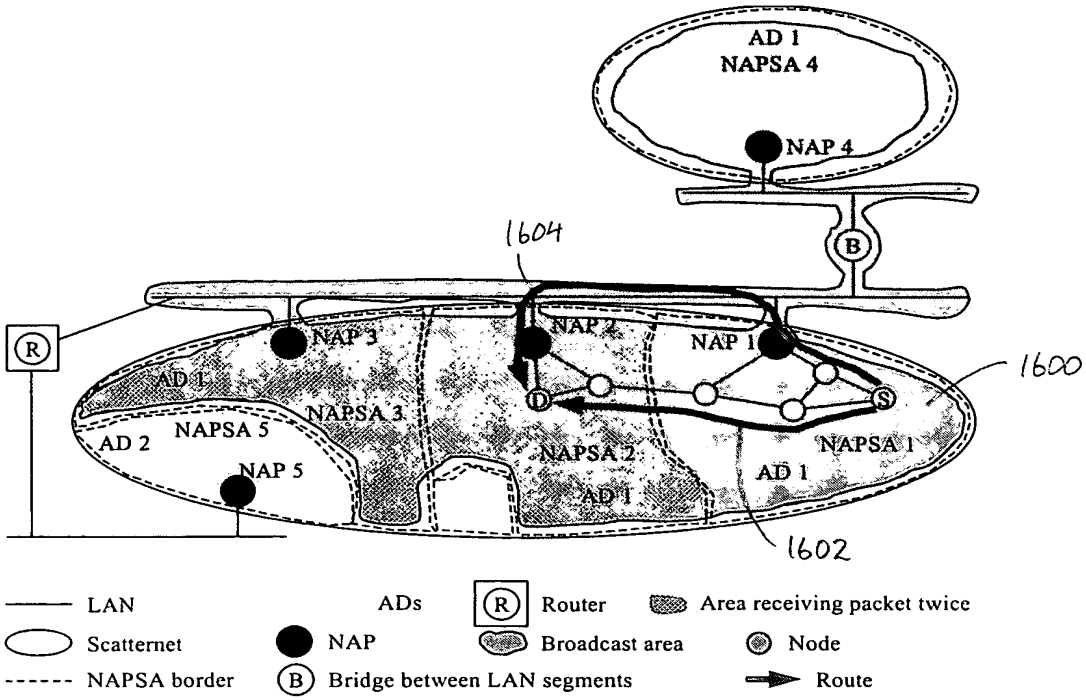
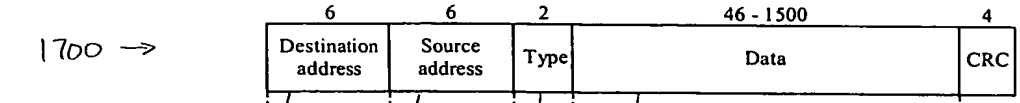
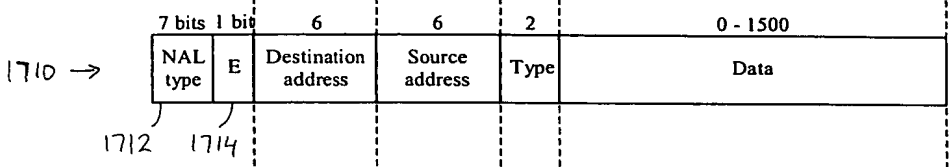

AD 1
NAPSA 4
NAP 4
1604
B
R
NAP 3
NAP 2
NAP 1
1600
AD 1
NAPSA 3
NAPSA 5
AD 2
NAP 5
D
S
NAPSA 2
NAPSA 1
AD 1
AD 1
1602
LAN
ADs
R
Router
Area receiving packet twice
Scatternet
NAP
Broadcast area
Node
NAPSA border
B
Bridge between LAN segments
Route

FIG. 16

Ethernet packet format



NAL unicast packet format



NAL broadcast packet format

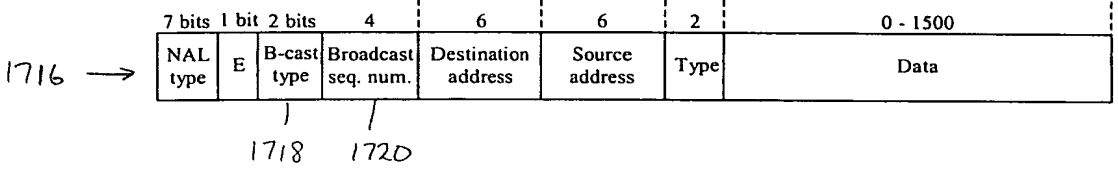


FIG. 17

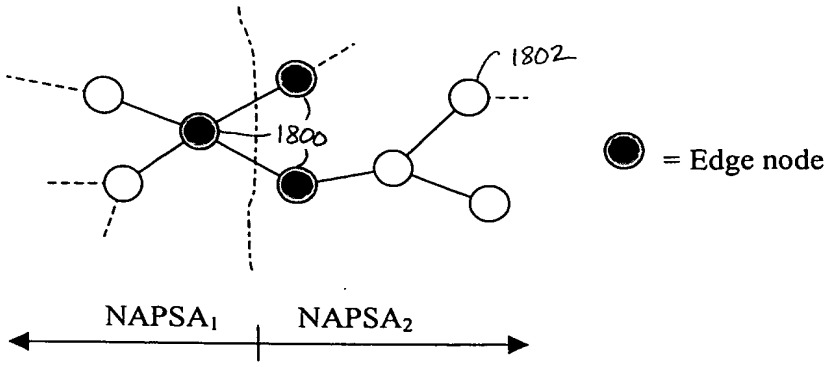


FIG. 18

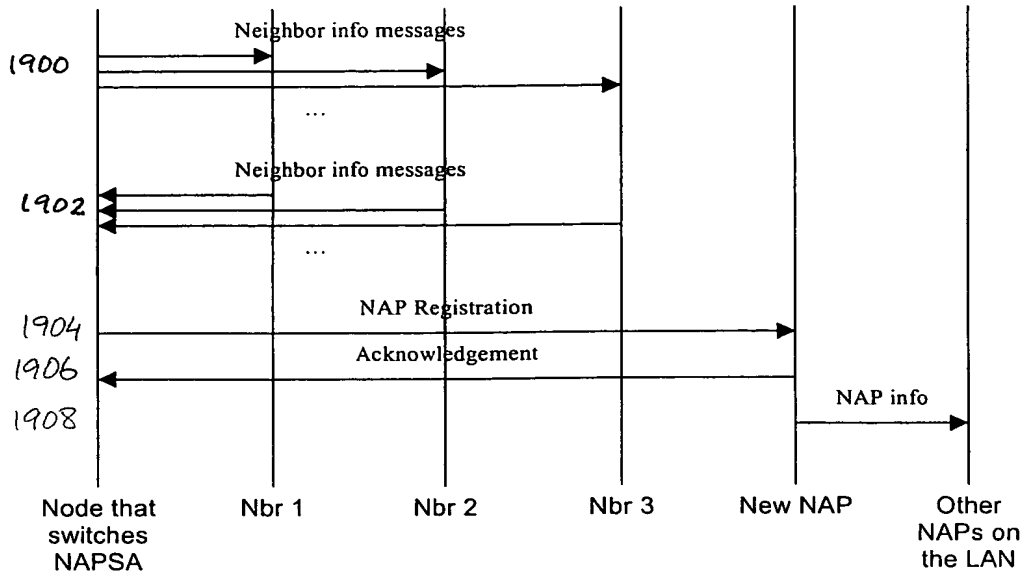

1900
Neighbor info messages
...
1902
Neighbor info messages
...
1904
NAP Registration
1906
Acknowledgement
1908
NAP info
Node that switches NAPSA
Nbr 1
Nbr 2
Nbr 3
New NAP
Other NAPs on the LAN

FIG. 19

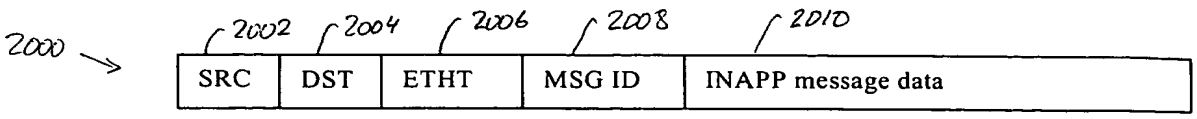

2000
2002
2004
2006
2008
2010
SRC
DST
ETHT
MSG ID
INAPP message data

FIG. 20

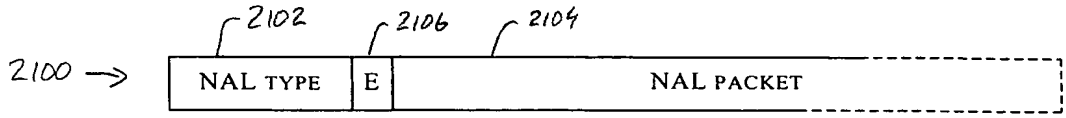

2100
2102
2106
2104
NAL TYPE
E
NAL PACKET

FIG. 21